Montana State Legislature

2011 Session

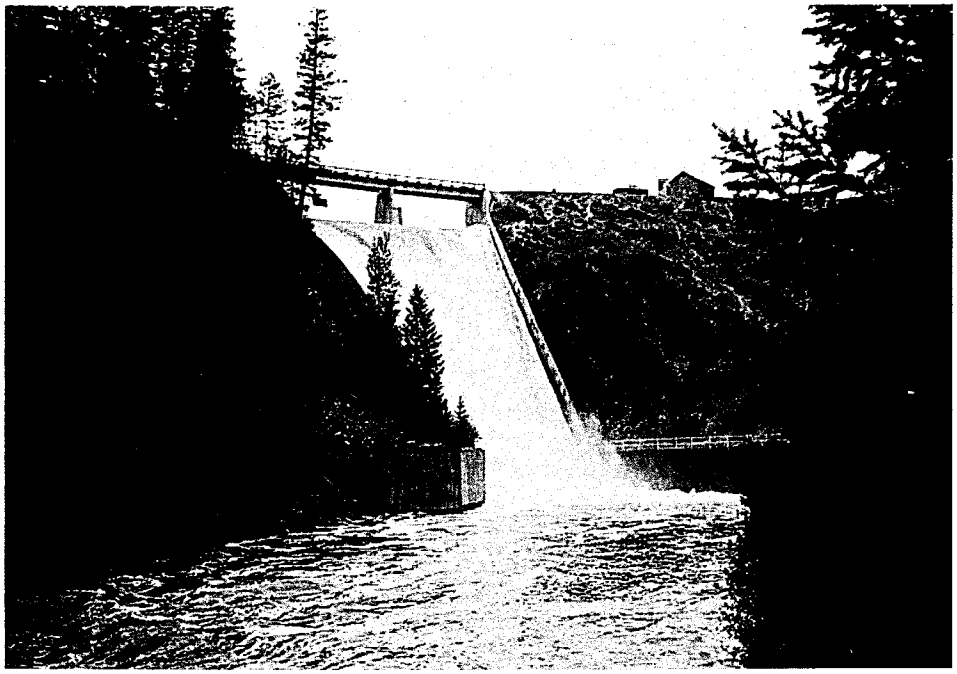
Exhibit 1

This exhibit is a booklet which can not be scanned, therefore only the front cover/table of content and 10 pages have been scanned to aid in your research.

The original exhibits are on file at the Montana Historical Society and may be viewed there.

EXHIBIT 1
DATE Jan 28, 2011
HB 6

Water Storage in Montana



Painted Rocks Dam in Ravalli County

A Report Submitted to the Sixty Second Montana Legislature

Office of the Governor

Pursuant to
Montana Code Annotated, Sec. 85-1-704 (1991)

MONTANA DNRC

WATER Resources Division

January 2011

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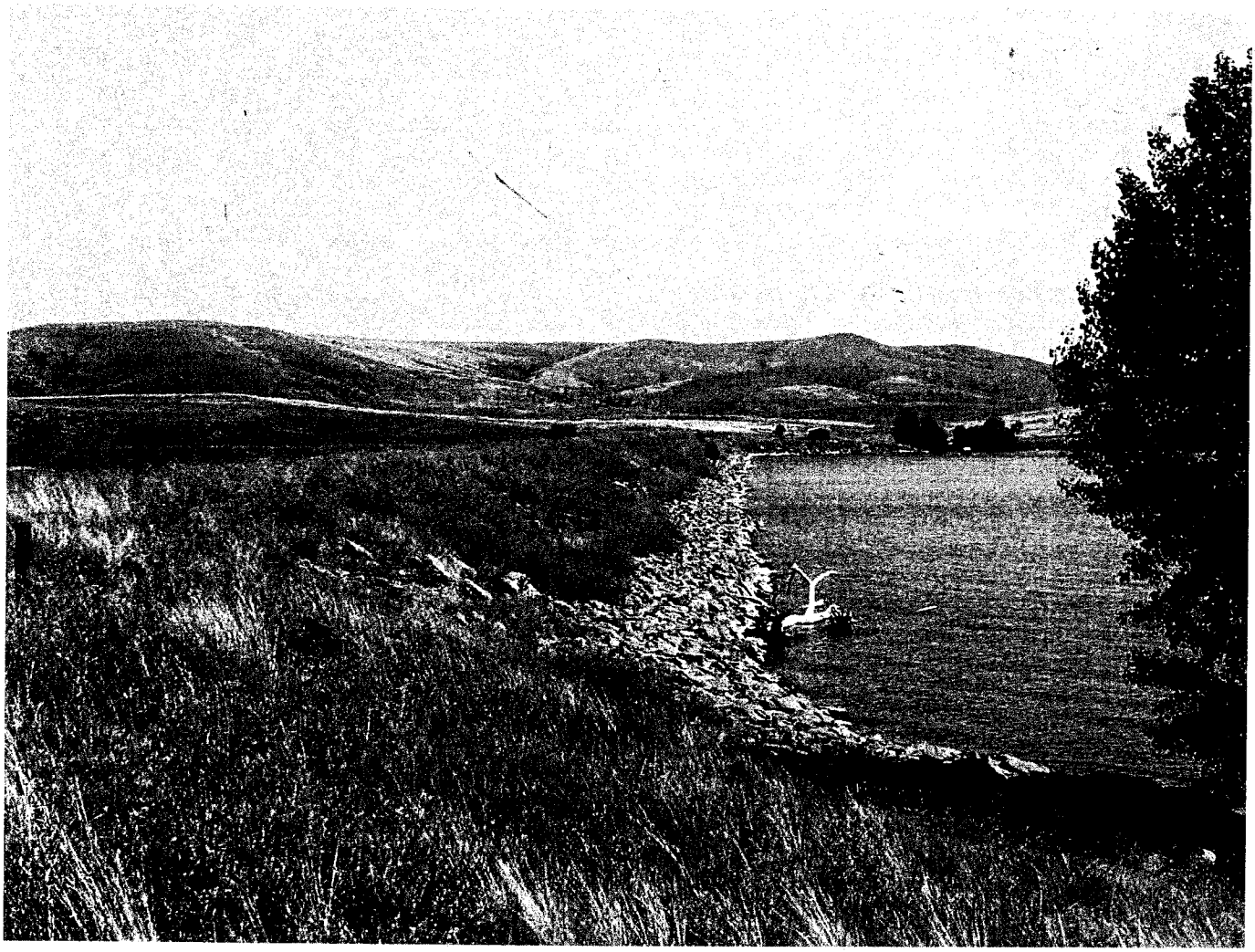

Cooney Dam in Carbon County (SWPB Photo)

EXECUTIVE SUMMARY

Montana law requires the Governor to submit a report on water storage to the Legislature each regular session. The Governor's Report on Water Storage in Montana prioritizes new rehabilitation and construction projects and summarizes rehabilitation and repair projects occurring during the previous two years. Appendix A contains MCA 85-1-703 Water Storage Policy.

For the 2013 Biennium, the Department of Natural Resources and Conservation Water Resources (WRD) and Trust Lands Management Divisions (TLMD) will be requesting DNRC Conservation and Resource Development Division Renewable Resource Grant and Loan Program (RRGL) grants for the following:

- Development of a hydropower feasibility study for Painted Rocks, Cooney and Tongue River Dams (WRD).
- The rehabilitation of Smith Lake Dam (TLMD).
- Construction of a new diversion with a fish screen on the Main Canal of the East Fork (Flint Creek) Project (WRD).

New project proposals with sponsors other than the DNRC include those listed below. Funding for new and previous projects is normally a combination of water storage, RRGL grant and loan, and private funds.

- DFWP sponsored repair of the Chadbourne Diversion Dam and retrofit of the existing fish passage.
- Two projects from the Pondera Conservation District partnering with the Pondera County Canal and Reservoir Company: 1) the C Canal Rehabilitation Project and 2) the Wasteway Rehabilitation and Water Quality Improvement Project.

In the last biennium, DNRC received RRGL Program grant and/or loans for the following:

- Rehabilitation of the Ackley Lake Dam. Additional funding was requested as a biennial appropriation from the Water Storage Special Revenue Account (completed in the spring of 2010).
- The rehabilitation of Deadman's Basin Dam, located in Wheatland County (completed in June of 2010).
- Pending rehabilitation of the drains at Martinsdale Dam (scheduled for the fall 2011).
- Several drop structures were replaced and 4,200 feet regraded on the Nevada Creek North Canal (Powell Co.).
- Extensive canal regrading and canal lining were improvements made on the Two-Dot Canal (Wheatland Co.).
- 1,200 feet of the Flint Creek Main Canal was lined and 4,000 feet regraded (Granite Co.).
- Automated monitoring instrumentation was installed on Middle Creek Dam in Gallatin County.
- The Ruby Dam Rehabilitation Project, Phase I - Spillway Rehabilitation (began June 2010; completion tentatively scheduled for Dec. 2011).
- The Turbine Shaft Seal was replaced at the Broadwater-Missouri Project. A significant cost savings ($70,000) was incurred by completing the job in-house. Funding was provided by the revenue generated by the sale of power from the project (completed July 2009).
- Cavitation repairs on the auxiliary low level outlet works were completed at Tongue River and Cooney Dams (Big Horn and Carbon Counties; completed fall 2011).
- The DNRC had one emergency repair during the 2011 Biennium. Severe cavitation necessitated an emergency repair for the Nevada Creek Dam outlet tunnel (completed June 2010).

Recently completed or ongoing work on non-state-owned water storage projects included

- Repairs at the Beaver Creek Dam in Hill County.
- The Carter Ponds Dam Rehabilitation in Fergus County.
- The Raymond Dam Reconstruction in Sheridan County.

Smith Lake in Flathead County (DNRC Water Operations Bureau Photo)

I. INTRODUCTION

The Office of the Governor is required by statute to submit a report on water storage to the legislature each regular session. The Governor's Report on Water Storage in Montana reviews state water storage policy and statutory criteria used for prioritization of proposed projects; identifies water storage projects proposed for development, including the rehabilitation of existing projects and progress on new projects; and summarizes water storage projects in progress over the previous two years.

The focus of this report is on projects that are partially or fully funded by the state. Projects that are regulated by the state with outside funding sources are also included. The federal government has a number of ongoing projects, primarily considered as maintenance, that are not included in the report. The report includes a table summarizing the prioritized projects and a map (see Appendix A) indicating each project type and its location. Information of water storage policy and statutory criteria can also be found in Appendix A.

Renewable Resource Grant and Loan (RRGL) Program:

The Montana Renewable Resource Grant and Loan (RRGL) Program provides grant and loan funding for projects that conserve, manage, develop, or protect renewable resources. RRGL loans are made available to public entities with proceeds from the sale of coal severance tax secured bonds and frequently are offered at a subsidized interest rate. The subsidy is paid with coal tax revenues. DNRC's funding recommendation to the 2011 Legislature includes the amount of financing needed to meet project and financing expenses and the interest rate suggested. Public loans are limited to an applicant's ability to repay under the standard repayment terms and by the bonding capacity of DNRC. Applicants who receive grant funding in conjunction with a loan do not receive an interest subsidy.

Statutorily, $5 million is available in funding for the RRGL Program. In past sessions, the legislature has elected to apply a $100,000 limit on individual state project or local government grants, although it has authority to appropriate additional funding for projects.

DNRC has requested RRGL grant funding on four state-owned water storage projects in the 2013 biennium. Two non-state-owned projects submitted RRGL grant funding requests for the 2013 biennium (Table 1). Matching federal funds and substantial private contributions are also used to help fund project rehabilitation costs. Funding approved in previous legislative sessions must be reauthorized by the current legislature. There were no loan requests submitted.

Water Storage Special Revenue and Hydropower Earnings Accounts:

State-owned water storage project dams classified as high-hazard that are in an unsafe condition receive first preference for use of funds from the state's Water Storage Special Revenue Account (Section 85-1-631 MCA). This is a separate funding source from the Renewable Resource Grant and Loan program. This account was designated by the 1991 Legislature to allocate 25 percent of the grant funds available, or $500,000 each biennium, under the RRGL program, to be used exclusively for state-owned water storage projects.

Another important funding source is the DNRC State Water Projects Bureau Hydropower Program. Earned revenues from the sale of power are used to help finance the rehabilitation of other DNRC state-owned water storage projects, per MCA 85-1-220. To date, one hydropower facility, the Broadwater Power Project near Toston, has been built. After debt payments and operating expenses, approximately $1.3 million per year in funding is available to rehabilitate state-owned dams.

Water Storage Project Classification and Terminology:
It is important that the reader have a basic understanding of some principles and terms related to dam safety classification used in this report. Standards used by the State of Montana are as follows:

- Unsafe spillway or dam - A spillway that is deemed unable to safely pass the maximum inflow design flood, or if the dam's structural integrity has become compromised since construction.

- High-hazard dam - A dam is high hazard if it stores more than 50 acre-feet and its failure has the potential for loss of human life, regardless of its current structural condition.

Note - The state's highest priority for repair and rehabilitation is assigned to dams classified as high-hazard that are in an unsafe condition. The high-hazard classification should not be confused with an assessment of a dam's structural integrity or condition.

- Repair of a project - Most often refers to scheduled or emergency action taken to return dam function to original design capacity or for a project to continue operation at a reduced, but safe level.

- Rehabilitation - Involves upgrading existing projects to comply with or to exceed current design standards and often includes full replacement of structural components.

Note - Design standards and methods have evolved considerably since the construction of most of the state's dams and repair alone may not bring a facility into compliance with current design standards. The storage capacity of a project is sometimes increased during rehabilitation, especially if enlargement is determined to be a cost-effective alternative.

DNRC State Water Projects Bureau:
The State Water Projects Bureau (SWPB) administers the operation, management, and rehabilitation of state-owned dams, canals, and hydropower projects under the purview of the DNRC WRD. A complete list of the projects, along with additional information, can be viewed on the DNRC WRD web site at:

http://www.dnrc.mt.gov/wrd/water_proj/default.asp.

SWPB also provides professional engineering and rehabilitation assistance on 10 additional water projects owned by the Department of Fish, Wildlife and Parks (DFWP). The SWPB markets water from the state-owned facilities primarily for irrigation and administers approximately 1,965 water-marketing contracts through local water user associations. The total combined volume of water marketed by the SWPB per year is 308,536 acre-feet. Revenue from the water purchase contracts, leasing of lands associated with the projects, and net revenue from hydropower generation supplements funds for state water project rehabilitation costs (see page 17). Debt repayment funds come from repayment contracts with water users. The SWPB ensures that projects are operated and maintained in a safe, efficient manner, are kept to current dam safety standards, and repayment contracts are properly administered. The SWPB is also responsible for overseeing repairs, maintenance, and rehabilitation of 250 miles of irrigation canals associated with state-owned projects. Canals are integral components of many state water projects, delivering water to water users served by the respective projects. Many of these canals were constructed in the 1930s and 1940s and are now in need of substantial rehabilitation. The SWPB Canal Operations Program is responsible for identifying and correcting operational deficiencies on state-owned canals.

II. WATER STORAGE PROJECTS PRIORITIZED

One of the requirements of the water storage report is to prioritize storage project proposals for the upcoming biennium. The following suggested prioritization for the water storage projects has been developed:

RRGL
Rank

1. MT DNRC Hydropower Feasibility Study (Ravalli, Carbon and Big Horn Counties)
5. MT DNRC Smith Lake Dam Rehabilitation (Flathead County)
9. Pondera CD – Irrigation Infrastructure Improvements – Pondera Canal Company C Canal (Pondera Co.)
11. Pondera CD – Irr. Infrastructure Improvements – Wasteway Rehab and Water Quality Improvements (Pondera Co.)
18. MT FWP Chadbourne Diversion Dam Repair and Selective Fish Passage Retrofits (Park County)
38. MT DNRC Flint Creek. Main Canal Diversion and Fish Screen Project (Granite County)

Table 1 lists storage project proposals for the 2013 Biennium in order of priority, and tabulates funding sources.

Table 2 lists ongoing or recently completed storage projects during the past biennium.

State-owned water storage projects that have dams classified as high-hazard that are in unsafe condition receive first preference for use of funds from the state's Water Storage Special Revenue Account (Section 85-1-631 MCA). Additionally, revenue received from the state's Hydropower Earnings Account is used to assist in the rehabilitation costs of active state-owned water projects.

The Montana Renewable Resource Grant and Loan (RRGL) Program provides funding for resource-related projects that conserve, manage, develop, or initiate the beneficial use of a renewable resource. Dams owned by private individuals and organizations with public benefits are eligible for $5,000 grants from the RRGL private grant and loan program to assist with repair costs. As shown in Tables 1 and 2, matching federal funds and substantial private contributions are also used to assist with rehabilitation costs.

Other projects recommended for funding through the RRGL program include waste water system, municipal drinking water, water management, and irrigation water conveyance (not related to storage). A complete list of the 2010 projects is provided in Appendix A. The project abstracts can be viewed at the following DNRC website:

http://www.dnrc.mt.gov/cardd/ResDevBureau/2010abstracts/2010rrg/default.asp

Table 1. 2013 Biennium Water Storage Project Proposals Prioritized

Storage Project Name (County) *Applicant / Owner*	**RRGL Grant Amount Requested / Rank**	**Water Storage Special Revenue Account**	**RRGL Loan**	**Other (Funding source)**
MT DNRC Hydropower Feasibility Study for Painted Rocks, Cooney and Tongue River Dams (Ravalli, Carbon and Big Horn Counties)	$100,000 (ranked 1)			DNRC $11,600 (in-kind)
MT DNRC Smith Lake Dam Rehabilitation (Flathead Co.)	$100,000 (ranked 5)			DFWP Community Pond Program $50,000; DFWP Future Fisheries Grant $50,000; DNRC $22,769 (in-kind)
MT DFWP Chadbourne Diversion Dam Repair and Selective Fish Passage Retrofit (Park County)	$100,000 (ranked18)			USFWS Fish Passage Grant $80,000; DFWP Future Fisheries $70,000
MT DNRC East Fork Main Canal Diversion Replacement and Fish Screen Installation (Granite Co.)	$100,000 (ranked 38)			FRIMA grants $589,000; NRDP grant $370,000
Non-State-Owned				
Pondera CD – Pondera Canal and Reservoir Company; C Canal Improvements (Pondera Co.)	$100,000 (ranked 9)			PCRC $25,481 (in-kind) ; Pondera CD $1,000 (in-kind)
Pondera CD-Pondera Canal and Reservoir Co.; Wasteway Rehab & WQ Improvements (Pondera Co.)	$100,000 (ranked 11)			Irrigation Dev. $15,000 (not included in project cost) Pondera Canal Co $54,200 (In-kind) Private Landowner $20,000

III. JUSTIFICATION FOR 2013 BIENNIUM PROJECT PROPOSAL PRIORITIZATION

The following projects are prioritized (from highest to lowest) by the Montana Department of Natural Resources and Conservation (DNRC) according to the criteria identified by Sec. 85-1-704 (4) (MCA) listed in Appendix I of this report. The Renewable Resource Grant and Loan Program (RRGL), administered by DNRC, independently ranked project proposals in the following order using a set of criteria that includes priority consideration for water storage projects. A number of the projects addressed in this report are seeking partial funding from the RRGL Program.

State Owned Projects

1. MT DNRC WRD Hydropower Feasibility Study (FS) for Painted Rocks, Cooney and Tongue River Dams (Ravalli, Carbon and Big Horn Counties). RRGL Ranked 1

Under Montana Annotated Code – Title 85, Chapter 1: "The department shall study the economic and environmental feasibility of constructing and operating a small-scale hydroelectric power generating facility on each of the water projects under its control and shall periodically update such studies as the cost of the electrical energy increases."

The State Water Projects Bureau (SWPB) owns twenty-one water storage projects consisting of 24 dams throughout the state. At present, the Toston Dam (Broadwater-Missouri) is the only state owned hydroelectric facility generating renewable energy and direct economic benefits to the State of Montana and its residents. Ruby River, Cooney, Painted Rocks, and Tongue River are four state owned on-stream dams with potential to have hydropower generation facilities. Ruby River dam is presently being studied for hydropower generation as part of its on-going spillway and outlet works rehabilitation project. Cooney, Painted Rocks, and Tongue River still need a Feasibility Study (FS) to determine if the generation of hydropower would be technically and economically feasible. The SWPB currently has preliminary permits awarded by the Federal Energy Regulatory Commission (FERC) to conduct due diligence on the Ruby River, Cooney, and Tongue River Projects.

This project would consist of contracting with a qualified consultant to perform a FS on the Cooney, Painted Rocks and Tongue River dams. The studies would determine: (1) if hydropower generation was technically feasible based on inflows, outflows, characteristics of each dam, access to the power grid, and construction possibilities; and (2) if hydropower generation at each facility would be economically feasible based on cost of construction, cost of operation and maintenance, amount of power generated, revenue created, cost of debt service, and the cost of tying into the present grid.

The study would determine hydropower generation feasibility at these dams in order to prioritize future hydropower projects. The SWPB is requesting an RRGL grant of $100,000 to fund the study. The proposal meets criteria 2 (b), (c), (e) and (g) of the water storage statute.

Proposed Project Budget		
Funding Source (grant/loan or cash reserves)	**Amount**	**Committed/Uncommitted**
RRGL Grant	**$100,000**	Uncommitted
DNRC In-Kind Services	**$ 11,600**	Committed

Note: Committed monies must have a written letter committing funds to the project.

Estimated Total Project Cost **$111, 600**

2. MT DNRC TLMD Smith Lake Dam Rehabilitation (Flathead County). RRGL Ranked 5

This dam is located on Smith Creek approximately seven miles northwest of Whitefish in Flathead County, T32 north, R22 west, section 32. The dam is an earthfill structure with a full pool storage capacity of 85 acre-feet sited on school trust land managed by the Trust Lands Management Division of the Montana DNRC. The dam was constructed in the fall of 1937 (based on archived newspaper reports), and the wooden spillway was replaced with the present concrete chute by the DFWP in 1958. The primary goal of this project is to repair and restore Smith Lake Dam, which supplies substantial public benefit. Before the dam was constructed, Smith Lake was a natural lake of approximately five acres. Upon completion of the dam, the lake expanded to 18.5 acres, where fish were reared for research and planting into other lakes, including Whitefish Lake. The fish-rearing project was abandoned in the late 1960s. In 2000, DNRC Dam Safety classified the dam as 'high hazard' due to its location above a paved county road and the size of the pond it impounds at full pool. In 2001, the DNRC completed, as feasible, the recommended immediate actions to reduce the risk of dam failure.

Resources that would benefit from implementation include public safety, water quality, recreation, and wildlife. The proposal to reconstruct the dam exceeds minimum safety factors, requires minimum maintenance, and would meet all Montana Dam Safety Standards while greatly reducing the current risk of turbidity and sediment that would flow into Smith Creek if the dam breached while in its present condition. The project would also develop and restore the recreation and fishery opportunities in and around Smith Lake. The DNRC and DFWP would like to partner to create a 'family fishing pond', which the community of Whitefish does not have currently. DFWP would stock the lake with westslope cutthroat trout, while DNRC would commit to roughing in a trail to the dam. The project would also benefit many wildlife species that are associated with habitat inclusive of a fishery pond surrounded by coniferous forest, such as the common loon, bald eagle, fisher, mink, and belted kingfisher. The DNRC Trust Lands Management Division is requesting an RRGL grant of $100,000 to help fund the project. The table below summarizes the proposed funding sources. The proposal meets criteria 3 (a), (b), and (c) of the water storage statute.

Proposed Project Budget		
Funding Source (grant/loan or cash reserves)	**Amount($)**	**Committed / Uncommitted**
RRGL Grant	**$100,000**	Uncommitted
DFWP Community Pond Program	**$50,000 ($22,680 for dam rehab)**	Uncommitted (funding decision by Feb. 2011)
DFWP Future Fisheries Program	**$50,000**	Uncommitted (funding decision by June 2011)
DNRC In-Kind	**$22,769**	Committed

Note: Committed monies must have a written letter committing funds to the project.

Estimated Total Project Cost $222,769